

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF GEORGIA
ATLANTA DIVISION**

FAIR FIGHT ACTION, INC, *et al.*,

Plaintiffs,

v.

BRAD RAFFENSPERGER, *et al.*,

Civ. Act. No. 18-cv-5391 (SCJ)

Defendants.

SUPPLEMENTAL EXPERT REPORT OF MICHAEL C. HERRON

William Clinton Story Remsen 1943 Professor
Department of Government
Dartmouth College
6108 Silsby Hall
Hanover, NH 03755-3547



April 8, 2020

Michael C. Herron, Ph.D.

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1 Introduction

1 This Supplemental Expert Report is a response to two reports filed in this litigation on March 24, 2020 by experts engaged by the State. The first report to which I am responding is titled, “Supplemental Report #1 of Thomas L. Brunell, Ph.D.,” and hereinafter I refer to it as the *Brunell Report*. The second such report is titled, “Rebuttal Report of Janet R. Thornton, Ph.D.,” and hereinafter I refer to this report as the *Thornton report*. Both the Brunell Report and the Thornton Report critique a report I wrote, titled “EXPERT REPORT OF MICHAEL C. HERRON,” dated February 18, 2020. Throughout this Supplemental Expert Report, I refer to this lattermost report as *my original report*.

2 The subject of my original report is the extent of polling place changes in Georgia in the period 2014-2018 and the extent to which these changes were racially neutral. In what follows, I briefly summarize the conclusions in my original report that were not disputed in the Brunell and Thornton Reports. I then discuss the Brunell Report and the Thornton Report in this order. Following my comments on these two reports, I return to the conclusions about polling place changes in Georgia that appear in my original report, and I explain why my conclusions remain valid, and in some dimensions actually have become stronger, despite the critiques leveled at them in the Brunell and Thornton Reports.

2 Conclusions in my original report not disputed in the Brunell and Thornton Reports

3 Broadly construed, my original report describes an analytical exercise in which I identify and characterize polling place closures in Georgia in the period 2014-2018 and then offer opinions as to the racial implications of these closures.

4 When I submitted my original report, I disclosed the data that I used to generate it. Following my deposition on February 26, 2020 in New York City, I disclosed the computer code that I wrote to analyze the data on which my report relies.

5 Neither Dr. Brunell nor Dr. Thornton raises any concerns about the accuracy of the data sources that I used in my report. In addition, neither raises any concerns about the computer code that I wrote in support of my analyses. Dr. Thornton appears to have worked directly with my code, writing that “[Dr. Herron’s] code was modified in order to generate his summary results by county as reported below” (p. 6).

6 In my original report, I define a closed polling place as one that was in use during the 2014 General Election but not in the 2018 General Elec-

tion. Dr. Brunell and Dr. Thornton raise questions about whether this is an appropriate definition of a closed polling place, but neither raises concerns about my calculations of closed polling place rates in Georgia based on the definition of a closed polling place offered in my report. My report offers a variety of approaches to the study of polling place closures in Georgia that took place in the 2014-2018 time period, and among other things it concludes that the rates at which polling places in Georgia closed in predominantly Black areas of the state in 2014-2018 exceed the rates at which polling places in Georgia closed in predominantly White areas of the state in 2014-2018. Neither Dr. Brunell nor Dr. Thornton disputes the calculations that support this conclusion.

7 My original report concludes that 2018 General Election turnout rates of registered voters in Georgia who received new polling places between 2014 and 2018 were lower than turnout rates of registered voters in the state who did not receive new polling places between 2014 and 2018. Neither Dr. Brunell nor Dr. Thornton disputes the calculations that lead to this result. In her report, Dr. Thornton draws particular attention to differential election day turnout rates in the 2018 General Election between Georgia registered voters who received new polling places in the period 2014-2018 and those who did not. She implies that the former individuals were “disenfranchised” via assignment of a new polling place (see p. 18, paragraph 43, of the Thornton Report).

3 Response to the Brunell Report

8 I now turn to the Brunell Report and the critiques that it levels at my original report. I believe that there are seven such critiques.

3.1 Critique: decisions about polling places in Georgia are made at the county level

9 At the start of his discussion of my original report, Dr. Brunell writes as follows: “[I]t is important to note that decisions regarding whether to move, open, or close a polling place is (sic) made at the county level. The state of Georgia is not responsible for these decisions. Thus, from the start, Prof. Herron’s report does not add any value to considerations related to policies of the *state of Georgia*” (p. 5, emphasis in original).

10 The context of this critique is that my original report’s results about polling place closures in Georgia in the time period 2014-2018 are statewide. This is because, simply, I was asked to study the extent of polling place closures in Georgia in the post-*Shelby County* period. My original report is open about the fact that it does not cover the entire post-*Shelby County* period, and this is because of a lack of data on polling place closures in Georgia between the promulgation of *Shelby County* and the 2014 General Election, which took place in November 2014. As such, my original report’s results should be understood as conservative insofar as there may have been

post-*Shelby County* polling place closures in Georgia that are beyond its scope.

11 My original report says nothing about the individuals or institutions in Georgia that promulgated the decisions that led to the polling place closures and changes that are documented in it. This matter is outside of the scope of my report. The report also says nothing about the intentions of the individuals who collectively staff these institutions. The matter of intentions is also outside the scope of my original report.

12 The key point here is this: the identities of the bearers of legal responsibility for the polling place closures and changes that took place in Georgia following *Shelby County* have nothing to do with the empirical findings that my report describes. Put another way, my original report seeks to document what has happened in the past several years in Georgia regarding polling place changes, and the statistical calculations in the report stand on their own independently of the identities of the decision makers behind the polling place changes described therein.

13 My original report does not assign responsibility to any officials in the state for what it documents. While, without citation, Dr. Brunell writes affirmatively that, “The state of Georgia is not responsible for... decisions [about polling places]” (p. 5), my report takes no such position on this form of responsibility. The legal question of who bears responsibility for the polling

place changes described and analyzed in my original report is outside my expertise and, to the best of my knowledge, outside the expertise of Dr. Brunell as well.

14 As an aside, in the process of critiquing my report on the basis of its ignoring the matter of where responsibility for polling place closures in Georgia truly lies, Dr. Brunell writes as follows: “Just like any report about zoning decisions made by local governments would demonstrate anything about other statewide policies.”

15 This passage is somewhat difficult to interpret, but I believe that Dr. Brunell is arguing here that local zoning decisions made in Georgia say effectively nothing about Georgia state policies.¹ This is almost certainly false: I am confident that local zoning decisions made in Georgia have to comply with Georgia state laws, not to mention the Georgia Constitution, United States federal laws, and the United States Constitution. This is the nature of local and state governance in the United States. Thus, local zoning decisions in Georgia do in fact demonstrate what is allowed and not precluded under Georgia state law and under other sets of laws, and I believe that this is contrary to what Dr. Brunell writes in his report.

¹I suspect that the word “not” is missing between the words “would” and “demonstrate.”

3.2 Critique: my original report cites only two articles in the literature on polling places and turnout.

16 Dr. Brunell raises a concern with my original report because it “cites only two peer-reviewed articles... to support [its] argument that when a voter is reassigned to a new polling location, the likelihood of voting decreases” (p. 5). Dr. Brunell states that, “There is some evidence [in the two articles] for the proposition at hand in [Herron’s report], though in terms of generalizability we may want to proceed with caution, because these highly specific studies may not be true of voters more generally” (p. 5).

17 I concur with Dr. Brunell that the two cited articles (both of which were published in peer-reviewed journals, as Dr. Brunell himself notes) contain “some evidence,” to use his language. In fact, the articles conclude that changing polling locations can lead to lower turnout, and Dr. Brunell does not contest the articles’ findings.

18 Dr. Brunell’s critique boils down to the assertion that in my original report I “only” cite two peer-reviewed articles in support of my study of the relationship between polling place closures and voter turnout. My response is twofold.

19 First, when I write academic papers, I cite existing literature and describe findings made by others. I do this because science is incremental,

and my research builds on others' results. The precise number of articles that I would cite in any particular venue can vary. If Dr. Brunell is concerned that two articles are insufficient, I would respectfully refer him to a third article, Haspel and Knotts (2005), which is a study of changes in polling places in Atlanta. This peer-reviewed study finds, like the literature cited in my original report, that changes in polling places can affect subsequent voter turnout. Insofar as Haspel and Knotts analyze a city in Georgia, which is the focus of this litigation, any concerns that Dr. Brunell has about the generalizability of the literature on polling places changes and turnout should be assuaged.

20 Second, I cite literature on the relationship between polling place changes and voter turnout to provide context and as a form of acknowledgement that I am not the first person to have studied this subject. Moreover—and perhaps most importantly—even if the cited articles in my original report (plus Haspel and Knotts) did not exist or were themselves fundamentally flawed, the findings in my report would still stand. Dr. Brunell simply does not challenge the findings in the cited work about the potential consequences for voter turnout of polling location changes. Even if he had successfully done so, this would not invalidate my calculations and results, which are valid apart from the fact that they are consistent with existing literature.

3.3 Critique: White registered voters are affected more than Black registered voters by polling place closures in Georgia

21 Throughout his report, Dr. Brunell critiques my original report because of its focus on a minority group in Georgia, namely, Black registered voters in the state. The essence of this critique is that the polling place changes that I identify in my original report are of negligible import because they affect more White registered voters than they do Black registered voters in Georgia, *i.e.*, they affect the majority racial group in Georgia to a greater extent in absolute terms than they affect a minority group.

22 For example, Dr. Brunell writes as follows: “While in four of the five categories [of homogeneous polling places], the Black closure rate is higher than the White closure rate, it is important to note that there are far more White voters affected than Black voters” (pp. 4-5). And, “[W]hile Black voters are affected at a slightly higher percentage than White voters, there are far more White voters affected by reprecincting decisions made at the county level” (p. 5). And most notably, “Prof. Herron concludes by saying that polling place closures were not racially neutral, and I agree, far more White voters were affected by polling place closures than Black voters” (p. 7).

23 Because there are almost twice as many White residents in Georgia as there are Black residents, it is hardly surprising that any set of election administrative rules or procedures will affect more White registrants in absolute terms than Black registrants.² Indeed, a parallel statement applies to all minority populations in Georgia. Changes to election laws in the state will tend to affect more White registered voters than registered voters of other race groups simply by virtue of the fact that Whites are by far the largest racial group in Georgia.

24 Because racial group sizes vary in Georgia (and in other states as well—nothing that I am writing here is unique to Georgia), assessments of the effects of election rules and procedures normalize, or control for, group size. In other words, in my original report I do not limit myself to asking, “How many White registered voters were affected by polling place closures in Georgia in the time frame 2014-2018?” and “How many Black registered voters were affected by polling place closures in Georgia in the time frame 2014-2018?” Rather, I ask in my report, “What *percentage of White registered voters* were affected by polling place closures in Georgia in the time frame 2014-2018?” and “What *percentage of Black registered voters* were affected by polling place closures in Georgia in the time frame 2014-2018?”

²As of July 1, 2019, the Georgia population was estimated to be 10,617,423. Of these, 60.5 percent (approximately 6,423,541) are white and 32.4 percent (approximately 3,440,045 are black). The ratio of 60.5 to 32.4 is approximately 1.87, which explains my use of “almost twice,” above. See “QuickFacts Georgia,” *The United States Census Bureau*, available at <https://www.census.gov/quickfacts/GA> (last accessed April 1, 2020).

The practice of examining percentages of individuals affected, or the rates at which they were affected, controls for differences in the sizes of race-based groups.

25 To illustrate the lack of depth in Dr. Brunell's critique that turns on group sizes, I offer two examples.

26 *Example 1.* As of April 7, 2020, there have been 141,100 cases of the coronavirus in New York (population 19,453,561) and 715 such cases in New Hampshire (population 1,359,711).³ By Dr. Brunell's logic, New York is worse off than New Hampshire with respect to the coronavirus because, simply, 141,100 is greater than 715. In fact, New York is much worse off than New Hampshire with respect to the coronavirus because it has approximately 197 times as many cases of the virus with a population that is only approximately 14 times as large as New Hampshire's. This example shows how a comparison between two types of individuals (here, residents of New York and residents of New Hampshire) depends on the sizes of their respective populations.

³For these virus infection figures, see "States Reporting Cases of COVID-19 to CDC," *Centers for Disease Control and Prevention*, available at <https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/cases-in-us.html> (last accessed April 7, 2020). For the populations of New York and New Hampshire, see "QuickFacts New Hampshire," *The United States Census Bureau*, available at <https://www.census.gov/quickfacts/GA> (last accessed April 1, 2020) and "QuickFacts New York," *The United States Census Bureau*, available at <https://www.census.gov/quickfacts/GA> (last accessed April 1, 2020).

27 *Example 2.* Suppose that a state is divided into ten counties, which are called County 1, County 2, County 3, and so forth. The state contains voting-eligible residents who belong to two groups, A and B. Group A is the majority group with 100,000 total residents who are spread equally across the state's counties. Group B is the minority group with 5,000 residents, all of whom are concentrated in County 1.

28 The government in the hypothetical ten-county state decides that residents of County 1 are not permitted to vote in an upcoming election. Per Dr. Brunell's logic, Group A is heavily penalized because 10,000 of its members (those who live in County 1) now have lost the franchise. In contrast, all 5,000 of Group B's members may not vote. Since 10,000 is greater than 5,000, it follows from Dr. Brunell's accounting that Group A is worse off than Group B, *i.e.*, is penalized more than Group B, by the state's disenfranchising decision regarding County 1.

29 Of course, this conclusion is simply a reflection of the fact that Group B is a minority group whose population is smaller than Group A's. In the scenario I have sketched here, ten percent of Group A has been disenfranchised by virtue of its living in County 1. However, literally 100 percent of Group B has been disenfranchised.

30 Much of my academic work is in the area of American election administration. I cannot imagine that any colleague of mine would argue

that poll taxes can be defended because they affect only a small number of individuals. Similarly, I cannot envision any colleague of mine arguing that the effects of election rules and procedures on distinct groups in a society should be evaluated without controlling for group size. That Dr. Brunell's critique proceeds in this vein I find remarkable, at odds with literally all recognized scholarship on election administration, and the critique should be dismissed outright.

3.4 Critique: small effect sizes suggest that county governments in Georgia are not engaged in systematic, racially discriminatory behaviors

31 Dr. Brunell asserts that the findings about polling place closure rates in my original report are not dramatic enough to indicate that county governments in Georgia are racially discriminatory. In particular, he writes, "The differences between [polling place] closure rates for these two racial groups is not sufficient, in my opinion, to support a conclusion that counties are engaged in systematic, racially discriminatory fashion in terms of decisions they make with respect to where polling places ought to be. Indeed the similarity of the rates of closure suggests that they do not" (p. 6).

32 My response to this critique is twofold.

33 First, my report does not engage the matter of responsibility for the polling place closures documented in it. I have already explained this.

34 Second, my original report describes a lack of racial neutrality in polling place closures. It does not propose a legal standard for evaluating when underlying policies are “racially discriminatory,” to use Dr. Brunell’s language. In his report, Dr. Brunell also sets out no such standard. Accordingly, I do not see a basis for Dr. Brunell’s use of “is not sufficient” in the cited passage above. I would have expected Dr. Brunell’s critique in this vein to be accompanied by an explication of a standard for assessing sufficiency and statistical evidence that speaks to the standard. Absent this, I find Dr. Brunell’s critique about small effect sizes to be without any basis.

3.5 Critique: my original report ignores reasons for why polling places were closed in Georgia

35 Dr. Brunell critiques my original report for not engaging the rationales behind polling place closures. In particular, he writes as follows: “It is important to note there are legitimate reasons for counties to move polling place, open new polling places, and close existing polling places – and Prof. Herron’s analysis does not take any of these potential reasons into account” (p. 7).

36 My response to this critique is twofold.

37 First, my report does not engage the “legitimacy” of any polling place closures, to again use a term offered by Dr. Brunell. This term does not appear in my report. I am not sure what a “legitimate” polling place closure looks like, and Dr. Brunell, in his report, does not offer a definition that would enable me to classify closures as either legitimate or illegitimate. Absent such a definition, I cannot assess the validity of Dr. Brunell’s claim on the existence of legitimate reasons for polling place closures.

38 Second, issues of legitimacy notwithstanding, my report does not engage the rationales for the polling place closures that it documents. These rationales, as I have stated above, are beyond the scope of the report. My report’s findings on polling place closures in Georgia stand independently of the rationales for them.

3.6 Critique: my original report does not take into account the possibility that all types of changes in polling places lead to reprecincting

39 Dr. Brunell critiques my report on the following basis: “It is worth noting that if a county adds new polling places or moves some polling places around but keeps the same number of polling places, both of these scenarios would result in voters being reprecincted (sic). Prof. Herron does not take this into account in his analyses” (p. 7).

40 This statement is erroneous. In paragraph 74 on p. 30 of my report, I state as follows: “Henceforth, when I state that a given Georgia polling place closed between the 2014 and 2018 General Elections, this means that the address for the polling place used in 2014 does not appear in the list of polling place addresses from 2018.”

41 This statement makes it clear that my report does what Dr. Brunell asserts that it does not. Invoking Dr. Brunell’s scenario, if a set of polling places are given new locations holding fixed the total number of polling places, all of the former places will be treated in my analysis as having been closed. The reason that my original report presented a clear definition (see paragraph 74 on p. 30) of a polling place closure was so that readers of the report would understand the basis for my asserting that a given Georgia polling place closed.

42 With respect to Dr. Brunell’s critique and my definition of a closed polling place, I would also note that, if after the 2014 General Election additional polling places had been added in Georgia to the set of existing polling places in the state as of November 2014 and in addition no polling place was shut down, I would not conclude that any polling places in the state closed as of 2018. This is because a closed polling place as I define it is one whose address was used in 2014 but not used in 2018.

43 Finally, Dr. Brunell does not present any data on the number of polling places that were added in Georgia between 2014 and 2018. He also does not present any data on the number polling places that “moved around,” to paraphrase his language above.

3.7 Critique: my original report’s results using proportions are inconclusive

44 Dr. Brunell critiques my original report’s results that depend on proportions as being inconclusive. He writes as follows: “Prof. Herron concludes by saying that polling place closures were not racially neutral, and I agree, far more White voters were affected by polling place closures than Black voters. If we restrict our analyses strictly to proportions, Prof. Herron’s analyses are inconclusive. There are some metrics in which the proportion of Black voters is slightly higher than White voters, although the reverse is true as well” (p. 7).

45 As far as I am concerned, essentially all of my original report’s key results rely on proportions, which means that I interpret Dr. Brunell’s critique as a generic one that applies to the report overall.

46 Why does Dr. Brunell single out “proportions” in the passage above? The reason is that, according to Dr. Brunell, the effect of polling place closures in Georgia should be analyzed by studying the total number of White

registered voters in the state affected by such closures and comparing this to the total number of Black registered voters so affected. My reliance on proportions—*i.e.*, my analysis of the *percentage* of Whites affected by polling place closures in Georgia and the corresponding *percentage* of Blacks affected by polling place closures in the state—is a weakness, per Dr. Brunell.

47 I have already noted that comparing total numbers of White registered voters affected by polling place closures in Georgia to total numbers of Black registered voters is confounded and rendered trivial by the fact that Georgia has more White residents than Black residents. Because of this, any analysis of White and Black registered voters in Georgia must control for group size differences, which my report does in its “proportions” calculations, meaning in essentially all of its calculations.

48 Now turning to the proportions results that Dr. Brunell does not value, these results are grounded in a series of complementary analyses of polling place closures. Bringing different perspectives to a single problem reflects a strategy known as triangulation.

49 With respect to the matter of whether Black registered voters were disproportionately affected by polling place closures compared to White registered voters, the proportions-based results in Table 3 (p. 53), Table 5 (p. 55), Table 7 (p. 56), and Table 9 (p. 61) all point in the same direction. Dr. Brunell has not disputed the underlying calculations supporting these

tables, the computer code that generated them, or the accuracy of the data on which they are based (although he did raise the question about whether the closures I identified are “legitimate,” but without an explanation of what this means, I cannot respond to this concern). Accordingly I do see any basis for Dr. Brunell’s referring to my report’s proportions-based results as “inconclusive.”

50 Given the seriousness of this charge, I would have expected Dr. Brunell to have carefully gone through my results and to have explained in detail why some results show that White registered voters were disproportionately affected by polling place closures in Georgia and other results, the opposite. Dr. Brunell did not do this, which undermines his charge that my results are inconclusive.

4 Response to the Thornton Report

51 I now turn to the Thornton Report and the critiques that it levels at my original report. By my accounting, there are nine such critiques.

4.1 Critique: decisions about polling place closures in Georgia are made by counties

52 The first critique leveled by Dr. Thornton against my report parallels a critique offered by Dr. Brunell, namely, that my report should not be

reporting Georgia-wide statistics but instead should have focused on county-level results. On this point, Dr. Thornton writes, “[P]roviding statistics in aggregate across the State of Georgia, as Dr. Herron does, is contrary to the [Georgia] statute that dictates that it is the county and not the state that makes decisions regarding the closure and placement of polling places” (p. 7, paragraph 21).

53 My response to this critique of Dr. Thornton is identical to my response to the same point made by Dr. Brunell. To recapitulate, my report says nothing about the individuals or institutions in Georgia that promulgated the decisions that led to the polling place closures and changes that I document. This matter is outside of the scope of my report. The report also says nothing about the intentions of the individuals who collectively staff these institutions. The matter of intentions is also outside the scope of my report.

54 The identities of the bearers of legal responsibility for the polling place closures and changes that took place in Georgia following *Shelby County* have nothing to do with the empirical findings that my report describes. Put another way, my original report seeks to document what has happened in the past several years in Georgia regarding polling place changes, and the statistical exercises in the report stand on their own independently of the identities of the decision makers behind the polling place changes described therein.

55 I noted as well in my response to Dr. Brunell that jurisdictions within states must operate with a legal framework established by state law and one that is consistent with a state's constitution (and local jurisdictions in Georgia are also subject to federal law and the United States Constitution). For this reason alone, there is nothing problematic about analyzing election administration practices within a state.

4.2 Critique: polling place closures may occur for various reasons, some of which are beyond the control of Georgia county Boards of Elections

56 In her report, Dr. Thornton argues that the polling place closures documented in my report "could have occurred for numerous reasons" (p. 7, paragraph 23). Dr. Thornton states as well that "a polling place may be closed because the facility no longer wishes to serve as a polling place... and some polling places are physically closed or torn down and, therefore, are no longer available to serve as a polling place" (pp. 7-8, paragraph 23). Dr. Thornton also avers that reasons for polling place may not be "under the control of... [Georgia] county Boards of Elections" (pp. 7-8, paragraph 23). Following these assertions about the extent to which my report ignores the reasons that polling places closed in Georgia between 2014 and 2018, Dr. Thornton offers as ostensibly problematic examples three polling place structures that existed in 2014 and were thereafter torn down, are allegedly

going to be demolished, or are closed.

57 My response to Dr. Thornton's critique about the reasons behind polling place closures in Georgia is fourfold.

58 First, to the extent that the critique turns on decisions made by members of County Boards of Elections, it is not germane. My report does not engage the individuals and institutions responsible for the polling place closures documented in it, and the report does not assert anything about County Boards of Elections nor about the Georgia Secretary of State. Rather, my report examines the extent to which polling places in Georgia were closed between the years 2014 and 2018, and it does not engage the matter of who was legally responsible for these closures. Therefore, whether any aspect of the polling place closures that my report documents was, or was not, under the control of a given county Board of Election or even multiple Boards of Election is not germane to the report's conclusions.

59 Second, Dr. Thornton's critique about varying rationales behind polling place closures, and her adducing three example closures, does not reveal anything systematic. Dr. Thornton, for example, has not estimated a rate at which polling places in Georgia were subject to demolition between the years 2014 and 2018, and Dr. Thornton does not present evidence suggesting that rates of polling place demolition were different in heavily Black

areas as opposed to heavily White areas in Georgia.⁴ Dr. Thornton does not even offer any reasons to think that this might be the case. Moreover, Dr. Thornton does not offer any estimates of the rate at which polling place structures in Georgia that, based on their physical conditions, could plausibly have been demolished were instead maintained and/or renovated.

60 Instead of offering a rigorous analysis of the rationales for the 459 polling place closures in Georgia between 2014 and 2018 that I document in my report, Dr. Thornton presents selective evidence. When evidence is chosen selectively, it cannot in general be used to draw conclusions that apply systematically.

61 For the purposes of understanding the rationale for the polling place closures in Georgia, Dr. Thornton should have sampled polling places as of 2014 at random, reported how many she examined, and then reported how many polling place structures were torn down, how many are presently slated for demolition, how many have been maintained despite poor physical conditions, how many have been renovated, and so forth. Dr. Thornton could also have studied all polling places as opposed to sampling randomly from them.

⁴As an aside, if it were true that schools in predominantly Black areas of Georgia were being torn down at rates greater than comparable schools in predominantly White areas (one of the example polling places mentioned on p. 8, paragraph 24, of the Dr. Thornton report is a school), this might raise a different set of questions, all of which are beyond the scope of my original report.

62 Rather than pursuing a research design like this, Dr. Thornton does not explain in her report how she selected her three example polling locations. I noticed (p. 8, paragraph 24) that all three are located in heavily Black areas in Georgia. Is that by design, meaning, did Dr. Thornton examine polling places in Black areas, looking for structures that were demolished? How many polling places did Dr. Thornton have to consider until she found three in heavily Black areas to describe? How many structures did she examine in heavily White areas? These are all important questions because they shed light on the extent to which Dr. Thornton's three example locations may be representative of closed polling locations in Georgia. Since Dr. Thornton did not provide any details of how she sampled polling locations for analysis, I cannot address any of the questions noted above.

63 Continuing in this vein, I am unable to ascertain if, for the purposes of her report, Dr. Thornton reviewed visual evidence on numerous Georgia polling places (like the evidence appearing on p. 9 of her report) yet presented evidence on only three of them. That would be very different than reporting physical information on a random sample of polling places or, ideally, on all of the polling places that existed in Georgia as of 2014.

64 Because Dr. Thornton's evidence on polling place demolition is selective as opposed to systematic and rigorous, there is no information in her report on the extent to which structure demolishing rates vary across Georgia, if they vary at all. Dr. Thornton's report also does not offer any evidence

about variance in building quality in White and Black areas in Georgia, something that is presumably correlated with rates of building demolition. If, to be clear, structures in predominantly White areas in Georgia are more substantial than those in predominantly Black areas in the state, one would expect to observe higher rates of building turnover (*i.e.*, demolition) in the latter. Of course this is speculative; I have no evidence on systematic polling place building quality differences across Georgia. Based on her report, Dr. Thornton likewise has no evidence on this point, further illustrating how non-systematic her evidence on polling place demolition truly is.

65 Third, Dr. Thornton's critique that I have described above is dependent in part on visual evidence of polling place demolition. While it is relatively easy to spot buildings that have been torn down, it is more difficult to find evidence of buildings that were renovated or buildings that could have been torn down based on poor physical condition but were not. Dr. Thornton does not offer a research design that could address this issue. Without sampling and classifying polling place buildings on the basis of their physical status, Dr. Thornton will be unable to understand if there is a difference between the probability that a polling place structure in a heavily White area is torn down versus the probability that a polling place structure in a heavily Black area is torn down.

66 Fourth, and perhaps most importantly, whatever the reason for the closure of a polling place, my report's objective was understanding the extent

to which White and Black registered voters in Georgia received new polling places in the post-*Shelby County* period. A voter in Georgia who is forced to use a new polling location because her prior location was demolished is in the same situation as a voter who is forced to use a new polling location because her prior location was changed for reasons other than building demolition. This is ultimately why my report is agnostic about why polling locations in Georgia closed between the years 2014 and 2018. Accordingly, the calculations described in my report, which show that Black registered voters disproportionately received new polling locations between 2014 and 2018, do not depend in any way on precisely why any individual in Georgia might have received a new polling place between 2014 and 2018.

4.3 Critique: my report’s statistics are “inflated” because of a failure to contend with different reasons for polling place closures

67 Dr. Thornton argues that my report’s conclusions are “inflated” because they ignore the reasons that polling locations closed in Georgia between 2014 and 2018. In particular, she states that, “Dr. Herron . . . has inflated his statistics regarding closure rates due to [a] failure [to address different reasons for polling place closure]” (pp. 7-8, paragraph 23). While this critique is a continuation of the previous one, wherein Dr. Thornton writes negatively of the fact that my report does not engage the rationales behind polling place

closures in Georgia, the charge of “inflated” results is serious enough for me to treat this particular critique as separate.

68 There are two reasons that the critique is not compelling.

69 First, my report literally counts polling place closures in Georgia between the years 2014 and 2018, and Dr. Thornton does not dispute the accuracy of any of my counts or the computer code that supports them. I would like to think that Dr. Thornton would not object to my classifying demolished polling places as closed (how could a demolished polling place remain open?), although I am not entirely confident about this.⁵

70 That said, independent of the number of polling places in Georgia that were demolished between 2014 and 2018, none of the polling places that I treat as closed was actually open in the 2018 General Election. Dr. Thornton does not suggest otherwise in her report. From this it follows that my counts, which are statistics, of closed polling places in Georgia are accurate and, more to the point, not inflated.

⁵My lack of confidence stems from the text of footnote 20 on p. 13 of Dr. Thornton’s report. In this footnote, which is a reference to a statement about variation across Georgia in closed polling place rates, Dr. Thornton offers the caveat, “Again, using Dr. Herron’s definition of a closure which includes movement of precincts due to building demolitions, etc” (p. 13). Notwithstanding that the subject of my report is closed polling places and not closed precincts, in my opinion this footnote does raise the question as to whether Dr. Thornton would treat a demolished polling place as one that is closed. Still, I move forward assuming that Dr. Thornton would do so.

71 I will phrase this another way. To make a compelling case that my original report's count (459) of closed Georgia polling places is inflated, Dr. Thornton would have had to find a polling location that I wrongly classified as closed. Dr. Thornton does not in her report identify any such polling place.

72 Second, let us suppose that Dr. Thornton were to argue that demolished polling places are different than other closed polling places and should not be counted as closed. I am not sure how Dr. Thornton would justify such an argument, but I am willing to accept this possibility as a hypothetical thought experiment.

73 In this case, some of the demolished polling places in, for example, predominantly White areas of Georgia should not be treated as closed and some of the demolished polling places in predominantly Black areas of Georgia should not be treated as closed. What is key, however, to understanding whether polling place closures in Georgia between 2014 and 2018 were racially neutral is not the absolute rates of polling place closures in White and Black areas of Georgia but rather the *difference* between these two rates. Therefore, if demolished polling places in Georgia should not be treated as closed, as Dr. Thornton might suggest, I would expect this to wash out of the difference between White and Black polling place closure rates. Consequently, race-based differences between polling place closures rates in Georgia can be accurate even if demolished polling places should not be treated as closed.

And, this implies that Dr. Thornton’s critique about my statistics being “inflated” misses the point. In the scenario described here, differences in rates, which are statistics, would be accurate and not inflated.

4.4 Critique: the 2016 General Election confounds my analysis of the turnout in the 2018 General Election

74 Among other things, my original report analyzes voter turnout in the 2018 General Election in Georgia and in particular compares turnout rates of two groups of registered Georgian voters, those who received new polling places between 2014 and 2018 and those who did not. My results in this vein show that Georgia registrants who received new polling places in the period 2014-2018 were less likely to vote in the 2018 General Election than those who did not. Tables 10-13 in my original report contain relevant results, which break down 2018 voter turnout by racial group.

75 These tables show that the 2018 General Election turnout rates of Black registrants in Georgia were more affected by polling place closures than the 2018 turnout rates of White registrants. This result does not hold for election day turnout in the 2018 General Election, however. Regarding election day voting in particular, White registrants in Georgia were more affected (or “disenfranchised,” to use Dr. Thornton’s term which appears on

p. 18 of her report) than were Blacks. Dr. Thornton comments at length in her report on this particular finding, and I return to it in the following section, where I argue that focusing on election day turnout in 2018 is inappropriate and that our focus should instead be on the consequences of polling place closures and changes on overall voter turnout. For the moment, though, I put to the side the matter of overall turnout versus election day turnout.

76 Dr. Thornton critiques my 2018 General Election turnout analysis with the following: “[I]t is likely that voters whose polling place (sic) changed prior to the 2016 election and who then voted in 2016 would have known of their new polling place (sic) at least two years prior to the 2018 election” (pp. 11-12, paragraph 27). While I cannot comment on the extent to which Dr. Thornton’s use in this sentence of “likely” is accurate, I address her critique of my turnout analysis below.

77 The essence of Dr. Thornton’s critique is that the 2016 statewide election in Georgia confounds my ability to analyze 2018 General Election turnout based on polling place changes that were promulgated between the years 2014 and 2018. In other words, the 2016 General Election is a complicating factor in any analysis that spans 2014-2018, and this is because it occurred in the middle of this time window.

78 My response to this critique of Dr. Thornton is to eliminate the role of the 2016 General Election as an intervening election in my voter turnout

analysis, and I now explain how I accomplish this.

79 In what follows, I take the voter turnout analysis in my original report and break it into two pieces. In particular, I analyze turnout in the 2016 General Election in Georgia based on polling place changes in the state that took place between 2014 and 2016, and subsequently I analyze turnout in the 2018 General Election based on polling places that took place between 2016 and 2018. By breaking my original turnout analysis that spanned four years into two analyses, each of which spans two years, I eliminate the confounding role of a potentially intervening statewide election, one which took place the middle of the period in which the polling place closures that I analyze in my original report occurred. In my new turnout analyses—there are two of them, which can be thought of as collectively replacing the one analysis that Dr. Thornton critiques—Dr. Thornton’s concern no longer applies.

80 To transition my original turnout analysis so that it considers 2014-2016 and 2016-2018 polling places changes in Georgia and thus responds to Dr. Thornton’s critique, I need to leverage polling place location data in the 2016 voterfile produced by the State during discovery. I discussed this voterfile on p. 20 of my original report. Previously I did not need to use polling place location data from the 2016 voterfile because my original report defines a closed polling place in Georgia as one that existed in 2014 but was not used in 2018 (for this definition, see paragraph 74 on p. 30 of my original report). Now, however, I generate two lists of closed polling

places in Georgia. One consists of polling places that were used in the 2014 General Election but not in the 2016 General Election, and a second consists of polling places that were used in the 2016 General Election but not in the 2018 General Election.

81 Parallel to my original report, I define a polling place that existed in 2014 as closed in 2016 if its physical address was in use in the 2014 General Election but not in the 2016 General Election. I find 264 polling places that closed in Georgia between 2014 and 2016. I carry out a similar exercise for polling places that were used in the 2016 General Election but not in the 2018 General Election, and I find 250 such polling places.

82 I now turn to the method I used in my original report to identify individuals who did not move between 2014 and 2018; see Section 4.6 on pp. 31-33 of my original report. This method compares voters' residential addresses across time, and in her report Dr. Thornton did not critique this method for identifying non-movers. That said, I identify all registered voters in Georgia in 2014 who did not move between 2014 and 2016, and in addition I identify all registered voters in Georgia in 2016 who did not move between 2016 and 2018.

83 In my analysis of turnout in 2016, I focus on registered voters who did not move between 2014 and 2016 ("non-movers"). This is because any individual who moved in this time period might receive a new polling place

by virtue of moving. Similarly, in my analysis of turnout in 2018, I focus on registered voters who did not move between 2016 and 2018. My original report focuses on non-movers as well, and this is explained in paragraph 144 on p. 57.

84 Lastly, I can only analyze the matter of whether a registrant in Georgia received a new polling place between the years 2014 and 2016 for individuals in Georgia who were registered to vote in both November 2014 and November 2016. A similar statement applies to the years 2016 and 2018. In my original report, when I analyzed voter turnout in the 2018 General Election as a function of the extent to which a registered voter received a new polling place in the time period 2014-2018, I restricted attention to individuals who were registered to vote in Georgia in 2014 and also in 2018.

4.4.1 Voter turnout in the 2016 General Election

85 I identify 4,964,140 individuals in Georgia who were registered to vote in 2014 and 2016 and did not move in this time period.⁶ Of these, there are 497,131 who received new polling locations between 2014 and 2016 and 4,467,009 did not.

⁶These counts of individuals exclude the very small number of registered voters for whom I cannot determine a polling place in 2014 or 2016. This practice is parallel to one that I used in my original report. The reason that there are any individuals for whom I cannot determine polling places is, I suspect, due to minor data coding errors in the voterfiles that I use for my analysis.

86 Using the State's voter history file for the 2016 General Election (see Section 4.2, pp. 24-25, of my original report for a discussion of these files), I can determine which of the registered voters in Georgia voted in 2016, and this allows me to calculate the 2016 General Election turnout rate for the non-moving, Georgia registered voters who received new polling locations between 2014 and 2016. I can also calculate the 2016 General Election turnout rate for the non-moving, Georgia registered voters who did not receive new polling locations between 2014 and 2016. These two turnout rates are approximately 57.7 percent and 60.6 percent, respectively. In other words, receiving a new polling place between 2014 and 2016 is associated with a voter turnout drop in the 2016 General Election of approximately 2.9 percentage points.

87 I now restrict attention to registered voters who participated in the 2014 General Election. There are 2,228,351 of these individuals, of whom 212,063 received new polling places between 2014 and 2016 and 2,016,288 did not. Their 2016 General Election turnout rates are approximately 91.5 percent and 92.4 percent, respectively. In other words, among Georgia registered voters who demonstrated their political engagement by voting in the 2014 General Election, receiving a new polling place between 2014 and 2016 is associated with a voter turnout drop in the 2016 General Election of approximately 0.9 percentage points.

88 It is intuitive, I would argue, that 2014 voters were less affected in the 2016 General Election by new polling places than individuals who did

not vote in 2014. Treating voting in the 2014 General Election as a proxy for political engagement, this suggests that the disruption caused by a voter's receiving a new polling place is felt most greatly by individuals who are the least politically engaged.

89 Insofar as my original report's objective was assessing the racial neutrality of polling place closures in Georgia in the post-*Shelby County* period, I disaggregate the above results on 2016 General Election turnout by race. This yields two tables that are parallel to two of the results tables in my original report, in particular to Tables 10 and 11. These two tables in my original report covered the period 2014-2018, however, and Dr. Thornton critiqued them because the 2016 General Election occurred during this time window. The results tables, below, are not subject to this critique.

Table 1: 2016 General Election turnout by race as a function of 2014-2016 polling place changes

Race	2014 voters	New place	Not new	Difference
White	2,899,908	64.15	66.07	-1.92
Black	1,460,055	53.01	55.40	-2.40
Unknown	370,389	42.83	45.51	-2.68
Hispanic	97,924	42.68	46.04	-3.36
Asian/Pacific Islander	78,791	47.22	47.73	-0.52
Other	54,206	43.90	46.82	-2.92
American Indian/Alaskan	2,526	41.73	43.10	-1.38

90 Table 1 reports 2016 General Election turnout rates, by racial group, for non-moving Georgia registered voters who appear in both the 2014 and

2016 voterfiles.⁷ According to this table, among White registered voters, receiving a new polling place is associated with a turnout probability drop of approximately 1.9 percentage points. For Black registered voters, the corresponding turnout drop is approximately 2.4 percentage points. Key to this table is the fact that all of the entries in the “Difference” column are negative, indicating that receiving a new polling place in the time period 2014-2016 is associated with lower voter turnout in the 2016 General Election, and the fact that the Black difference in Table 1 is greater in magnitude than the White difference.

Table 2: 2016 General Election turnout by race as a function of 2014-2016 polling place changes, 2014 voters only

Race	2014 voters	New place	Not new	Difference
White	1,441,680	92.74	93.36	-0.62
Black	621,173	90.11	91.11	-1.00
Unknown	109,053	87.33	88.34	-1.02
Hispanic	21,772	88.60	88.81	-0.21
Asian/Pacific Islander	18,155	87.71	89.21	-1.50
Other	15,853	88.62	88.77	-0.15
American Indian/Alaskan	586	87.93	84.47	3.46

91 Table 2 contains similar results but includes only those Georgia registered voters who voted in the 2014 General Election. I use this as a proxy for being politically engaged.

⁷This table, like others in this report and in my original report, ignores the very small number of Georgia registered voters who have erroneous race codes in the various voterfiles on which my results rely. The numbers of such individuals are minuscule, and neither the results in this report nor in my original report depend on them.

92 Per Table 2, for all race groups except American Indians/Alaskans, receiving a new polling place in the time period 2014-2016 is associated with lower voter turnout in the 2016 General Election. Moreover, the Black difference (approximately one percentage point) in Table 1 is greater in magnitude than the White difference (approximately 0.6 percentage points), implying that Black registered voters were affected more than White registered voters by polling place closures in Georgia in the period 2014-2016.

93 My results on 2016 General Election voter turnout are qualitatively similar to the results in my original report that analyzed voter turnout in the 2018 General Election as a function of the extent to which registered voters in Georgia received new polling places in the 2014-2018 time period. Dr. Thornton was critical of those results, however, because of the intervening 2016 General Election. I have taken Dr. Thornton's critique seriously, and my results on turnout in the 2016 General Election reflect this. These results are not subject to the critique that Dr. Thornton raised, and this is because the 2016 General Election is the endpoint—and not an intervening point—for the analysis described above.

4.4.2 Voter turnout in the 2018 General Election

94 I now turn to voter turnout in the 2018 General Election. Rather than asking whether turnout in this election was affected by the extent to which registered voters in Georgia received new polling places in the window 2014-

2018, I instead consider whether turnout in the 2018 General Election reflects polling place changes in the window 2016-2018. This change in time windows is in accordance with my response to Dr. Thornton, as I have detailed above.

95 I carry out essentially the same calculations for the 2018 General Election as I did for the 2016 General Election. When I analyze the 2018 General Election here, however, I use voting in 2016 as a proxy for political engagement. I had previously used voting in the 2014 General Election as a proxy in this way.

96 I identify 4,833,423 non-moving registered voters in Georgia who appear in the 2016 and 2018 voterfiles. Of these, there are 520,184 who received new polling locations in the 2016-2018 time window and 4,313,239 who did not.

97 Among those who received new polling places, approximately 61.2 voted in the 2018 General Election. Of those registered Georgians who did not receive new polling places, approximately 62 percent voted in the 2018 General Election. Therefore, receiving a new polling place between 2016 and 2018 is associated with a voter turnout drop in the 2018 General Election of approximately 0.8 percentage points.

98 Restricting attention to the 3,412,578 registered voters in Georgia who voted in the 2016 General Election, there are 364,101 who received

new polling places in the time period 2016-2018 and 3,048,477 who did not. Turnout rates for these two groups of registered Georgians are approximately 81.4 percent and approximately 82 percent, respectively. From this it follows that, among politically engaged registered voters in Georgia, receiving a new polling place between 2016 and 2018 is associated with a voter turnout drop in the 2018 General Election of approximately 0.6 percentage points.

99 This percentage point gap is smaller than the 0.8 percentage point gap associated, above, with the drop in 2018 General Election turnout when comparing all registered voters who received new polling places in the time frame 2016-2018 with all of those who did not. As I noted earlier in my analysis of voter turnout in the 2016 General Election, this result suggests that the disruption caused by a voter's receiving a new polling place is felt most greatly by individuals who are the least politically engaged.

100 I now disaggregate my 2018 General Election turnout rates by race. This yields Tables 3 (all non-moving registrants in Georgia who were in both the 2016 and 2018 voterfiles) and 4 (all non-moving registrants in Georgia who were in both the 2016 and 2018 voterfiles and who voted in the 2016 General Election). These two tables are analogous to Tables 1 and 2, above.

101 Table 3 shows that, for non-moving White and Black registered voters in Georgia, receiving a new polling place in the period 2016-2018 is associated with a drop in 2018 General Election turnout. For White regis-

Table 3: 2018 General Election turnout by race as a function of 2016-2018 polling place changes

Race	2014 voters	New place	Not new	Difference
White	2,788,962	65.58	66.19	-0.60
Black	1,394,607	58.20	60.45	-2.24
Unknown	387,959	48.20	46.84	1.36
Hispanic	112,315	46.27	47.09	-0.82
Asian/Pacific Islander	89,874	49.67	48.78	0.89
Other	55,569	49.39	50.59	-1.20
American Indian/Alaskan	3,862	40.87	43.12	-2.25

tered voters, the drop is approximately 0.6 percentage points, and for Black registered voters, approximately 2.2 percentage points. For five of the seven race groups in the table, receiving a new polling place in 2016-2018 is associated with lower 2018 turnout, but the opposite obtains for individuals of unknown race and Asian/Pacific Islanders. Lastly, Table 3's effect for Black registered voters is greater in magnitude than the associated effect for White registered voters, suggesting that Black registered voters are more disrupted than White registered voters by polling place changes.

Table 4: 2016 General Election turnout by race as a function of 2014-2016 polling place changes, 2016 voters only

Race	2014 voters	New place	Not new	Difference
White	2,116,840	82.43	83.04	-0.61
Black	916,050	82.08	83.39	-1.32
Unknown	220,282	75.83	74.76	1.07
Hispanic	69,313	67.86	68.35	-0.49
Asian/Pacific Islander	54,287	71.33	70.70	0.63
Other	33,483	73.48	74.96	-1.48
American Indian/Alaskan	2,210	65.35	65.59	-0.24

102 Restricting attention to individuals who voted in the 2016 General Election (recall, I use this as a proxy for political engagement), Table 4 has similar results to the previous Table 3. Namely, both White and Black registered voters appear negatively affected by polling place changes made from 2016 to 2018 in that turnout rates in November 2018 were lower for members of these two race groups who received new polling places. Moreover, the effect was greater on Black registered voters than White registered voters, and this result follows from the fact that -1.32 is greater in magnitude than -0.61.

4.4.3 Concluding thoughts based on 2016 and 2018 turnout

103 In this section of the report, I have responded to a critique leveled by Dr. Thornton against the analysis of voter turnout in the 2018 General Election that appears in my original report. The analysis concerning Dr. Thornton presented evidence that both White and Black registered voters in Georgia who received new polling places in the time period 2014-2018 had lower turnout rates in the 2018 General Election than White and Black registered voters in Georgia who did not receive new polling places in this time period.

104 As I have reviewed above, Dr. Thornton critiques my analysis of 2018 General Election turnout on the basis of the timing of the 2016 General Election, namely, in the middle of the 2014-2018 during which 459 polling

places in Georgia were closed. Dr. Thornton argues, essentially, that the 2016 General Election confounds my analysis of turnout in the 2018 General Election.

105 I have responded to Dr. Thornton by effectively removing the 2016 General Election from the middle of the time period that I analyze. I do this by offering two complementary analyses of voter turnout, one of turnout in the 2016 General Election (based on polling place changes 2014-2016) and one of turnout in the 2018 General Election (based on polling place changes 2016-2018).

106 My two analyses described above have qualitatively identical results: White registered voters in Georgia who received new polling places had lower turnout rates than those who did not receive new polling places; Black registered voters in Georgia who received new polling places had lower turnout rates than those who did not; and, the drop in turnout rates associated with receiving a new polling place was greater for Black registered voters than for White registered voters.

107 These results on the relationship between polling place changes and voter turnout are also qualitatively the same as those in my original report. That is to say, the voter turnout results that I describe here have the same implications as those that were critiqued by Dr. Thornton. Far from weakening my original conclusions, this supplemental analysis of voter turnout demon-

strates the soundness of the relationship between polling place changes and turnout across multiple elections between 2014 and 2018.

4.5 Critique: many Georgians vote absentee or via early voting

108 In the previous section of this report, I noted that Dr. Thornton critiques my voter turnout analysis in part by arguing that it misleadingly focuses on whether registered voters who received new polling places prior to an election voted in the election and not on whether these individuals voted on election day in the election. I wrote, earlier, that I would return to this point, and I do so now.

109 Dr. Thornton states in her report (p. 16) that in the 2018 General Election more Georgians voted by mail and via early voting than they did in the period surrounding the previous 2014 General Election. I do not dispute this assertion, which is based on figures collected by the United States Election Assistance Commission (EAC).

110 With 2014 and 2018 absentee, early voting, and election day voting rates as background, Dr. Thornton asserts the following: “Dr. Herron fails to consider the influence of this shift [away from Election Day voting] on the decisions made by counties to move or close election day polling places” (p. 16).

111 I respond to this critique in several ways.

112 First, although Dr. Thornton does not articulate an explanation as to why my failing to consider how Georgia voters cast their ballots is ostensibly problematic, I suspect she has in mind an argument as follows. If Georgia voters over time move away from election day voting, it is natural for the state to have fewer election day polling places.

113 Even if this position were to hold, it would not explain why, for example, polling places in heavily Black areas of Georgia were closed at rates greater than those in heavily White areas of Georgia. It would not explain as well why Black registered voters in Georgia had a greater likelihood in 2014 of having a closed polling place than White registered voters in 2014. Keeping in mind that my original report seeks to understand whether polling place closures in Georgia in the post-*Shelby County* period were racially neutral, key to the report are *differences* between White and Black registered voters in the manner that polling places closed in Georgia in the time period 2014-2018. I see nothing in Dr. Thornton's critique about my original report's ostensible failure to consider a temporal shift (2014 to 2018) in absentee and early voting that would bias any of the race-based differences that appear in my original report.

114 Second, Dr. Thornton's critique about election day, absentee, and early voting is practically circular. The EAC statistics that Dr. Thornton

cites in her Table 2 are from the 2014 and 2018 General Elections. Those are in fact the only two elections covered in the table. However, the polling place closures that I document in my original report took place *before* the 2018 General Election.

115 The significance of this point is as follows. One might imagine that, the fewer polling places available to registered Georgia voters, the greater the number of registered voters who do not vote on election day, all things equal. If this holds, then Dr. Thornton's Table 2 may be a reflection of the types of polling place closures described in my original report. From this perspective, it is not the case that my report "fails to consider" an ostensible shift in Georgia away from election day vote, as Dr. Thornton asserts. Rather, the report provides a potential explanation for the voting method changes noted by Dr. Thornton in her Table 2 that occurred between 2014 and 2018.

116 Third and finally, critiquing my report for "fail[ing] to consider" one aspect of Georgia election administration, namely, the rates at which registered voters in the state cast election day, early, and absentee ballots, is not compelling absent logic explaining why an ostensible "failure to consider" would lead to biases in my report's results. In fact, Dr. Thornton does not explain which of my report's conclusions might be suspect on the basis of the ostensible failure that troubles her. If Dr. Thornton is going to level a critique against my report, I would have expected to see an explanation in this vein.

4.6 Critique: non-election day voters are not impacted by changes in polling places

117 What appears to be a serious critique leveled by Dr. Thornton against my original report appears in the end of her report, specifically on pp. 16-17. In particular, Dr. Thornton argues in these pages that my analysis of turnout in the 2018 General Election is “misleading” because it does not exclude individuals who cast absentee and early ballots in the 2018 General Election. She goes on to say that my “Tables 10 and 11 are curious because they appear to include those who voted early and/or submitted absentee ballots” (p. 16, paragraph 37). Implicit in this critique put forth by Dr. Thornton is the idea that the only potentially downstream effect of closed polling places is on election day turnout and that, if registered voters in Georgia respond to closed polling places by voting absentee or early, said polling place closures are not problematic.

118 This critique is fundamentally flawed.

119 First, the premise of the argument does not make sense. Consider this statement by Dr. Thornton: “[Absentee and early] voters would not be impacted by a change in polling place because early voting places and submitting an absentee ballot have no relationship to the election day polling place of a voter” (p. 16, paragraph 37). I am concerned that Dr. Thornton appears not to recognize that a voter who casts an absentee or early ballot

might be doing so precisely because of polling place closures. In the context of the 2018 General Election, registered voters in Georgia whose polling places closed were faced with the choice of voting absentee, early, or on election day. The premise of Dr. Thornton’s argument would make sense only if one were to assume *a priori* that a voter’s decision as to whether to cast a ballot on election day is independent of, *i.e.*, has literally nothing to do with, whether the voter’s polling place has closed. When polling places close, the cost of voting on election day increases. Accordingly, it seems absurd to propose, as Dr. Thornton does, that voters’ decisions as to how to cast their ballots (absentee, early, or on election day) have nothing to do with the closures of their polling places.

120 Second, not all forms of voting are equal. Implicit in Dr. Thornton’s statement that non-election day voters in Georgia are not impacted by changes in polling places is the notion that, as long as a Georgia registered voter was able to cast a ballot in the 2018 General Election, it does not matter when or where this occurred. This premise would hold if voting early and voting absentee are perfect substitutes for voting on election day. They are not perfect substitutes, and my reasoning for this point is as follows.

121 Individuals who cast their ballots in an early voting period have less information about the election in which they are participating than do individuals who vote on election day. This is self-evident. If a voter casts a ballot one week before an election, and in the intervening week a political

development casts new light on some of the candidates running for office, the voter will not have the chance to act on this information. An election day voter will, however.

122 In addition, an early voter can cast a ballot for a candidate that, by election day, has withdrawn his or her name from consideration. This is not merely a hypothetical concern. In the 2020 Democratic Presidential Primary, approximately four million voters in the states of California, Colorado, Texas, and Utah cast their ballots *before* three prominent candidates withdrew from the Primary.⁸

123 For these two reasons, early voters face a disadvantage compared to election day voters. The same applies to absentee voters. Namely, individuals who cast absentee ballots prior to an election have less information about the election in which they are participating than do individuals who vote on election day. And given the timing of absentee voting, an absentee voter can cast a ballot for a candidate that, by election day, has withdrawn his or her name from consideration.

124 An additional aspect of absentee voting that distinguishes this form of voting from election day voting is that mailed, absentee ballots can be

⁸See “Millions voted early — and some wasted their ballots on candidates who quit,” *NBC News*, March 3, 2020, available at <https://www.nbcnews.com/politics/2020-election/millions-voted-early-some-wasted-their-ballots-candidates-who-quit-n1148646> (last accessed April 3, 2020).

rejected if a voter's signature does not match a signature on file with election officials.⁹ Signature matching and the potential of ballot rejection are not facets of election day voting. The matter of rejected absentee ballots is beyond the scope of this Supplemental Expert Report, and I note it here only in response to Dr. Thornton's positing that early and absentee voting can substitute for election day voting.

125 I have argued above that there are distinct disadvantages associated with early and absentee voting. In particular, these forms of voting expose voters to risks that do not exist on election day. This explains my statement, above, that not all forms of voting are equal.

126 Because all forms of voting are not equal, the opportunity to vote early or via absentee ballot does not moot any potential consequences of polling place closures. This is why Tables 10 and 11 in my original report focus on turnout in the 2018 General Election, and it is why these tables are ultimately not "misleading," as Dr. Thornton charges. They are not misleading, that is, because they summarize by race the percentage of non-

⁹This is not a hypothetical concern. See, for example, "Rejection of hundreds of absentee ballots in suburban Atlanta county draws legal challenges," *The Washington Post*, October 16, 2018, available at https://www.washingtonpost.com/politics/rejection-of-hundreds-of-absentee-ballots-in-suburban-atlanta-county-draws-legal-challenges/2018/10/16/dafce19a-d177-11e8-b2d2-f397227b43f0_story.html (last accessed April 7, 2020) and "Concerns growing over rejection of mail-in ballots in Georgia, other states," *NBC News*, October 30, 2018, available at <https://www.nbcnews.com/politics/elections/concerns-growing-over-rejection-mail-ballots-georgia-other-states-n926381> (last accessed April 7, 2020).

moving Georgia registered voters who received a new polling place in the period 2014-2018 and then voted in the 2018 General Election and the percentage of non-moving Georgia registered voters who did not receive a new polling place in the period 2014-2018 and then voted in the 2018. These percentages are exactly what I should be looking at when considering possible downstream effects of polling place closures that took place in Georgia between the years 2014 and 2018.

127 Tables 12 and 13 in my original report look explicitly at election day voting in the 2018 General Election. They show, broadly speaking, that White registered voters who received new polling locations in the period 2014-2018 shifted more than corresponding Black registered voters away from election day voting. This result is of secondary importance insofar as the aforementioned Tables 10 and 11 show that White registered voters who received new polling locations in the period 2014-2018 voted more often than corresponding Black registered voters.

128 Dr. Thornton states that the figures in Tables 12 and 13 show that “African-American registered voters were ‘disenfranchised’ the least during the 2018 election by changes in the polling place” (p. 18, paragraph 43, quotation marks in original). Dr. Thornton’s use of “least” here, however, is incorrect given the results in my original report’s Tables 10 and 11. These two tables show that Black registered voters reacted more precipitously than White registered voters to having a new polling place prior to the 2018

General Election turnout. Thus, based on Dr. Thornton’s use of “disenfranchised,” it follows that Black registered voters in Georgia faced greater disenfranchisement than White registered voters on account of polling place changes in the state during the period 2014-2018.

129 I conclude this section of my Supplemental Expert Report by drawing a parallel between Dr. Thornton’s arguments about polling place closures not mattering for individuals who vote early or via absentee voting and the notion of *Separate but Equal*. If a particular group of individuals in Georgia is disproportionately shunted away from election day voting by polling place closures (or, for that matter, by changes in other aspects of Georgia election administration), I would argue that this group is disproportionately burdened, even if members of this group are able to vote successfully after being so shunted. Given the risks associated with non-election day voting, to suggest otherwise would be to posit that the group’s separate treatment is nonetheless equal to the way that other groups are treated. Given the risks associated with non-election day voting, differential access to election day voting leads to differential, and non-equal, burdens.

4.7 Critique: Black registered voters who move should never be counted as having had their polling places closed

130 My original report concludes that 459 polling places that existed during the 2014 General Election in Georgia closed prior to the 2018 General Election. There are 1,016,184 registered voters in the 2014 Georgia voterfile who were assigned to the 459 polling places, and Table 3 in my original report describes the racial breakdown of these individuals.¹⁰

131 I show that Black registered voters were more likely by 0.12 percentage points than White registered voters to have a polling place that was closed, but Dr. Thornton critiques this finding, writing that, “[T]his comparison [of Black and White registered voters in Georgia] included registered voters who moved and consequently, their polling place would have potentially changed regardless of a closure in their 2014 polling place” (p. 12, paragraph 29).

132 The argument that Dr. Thornton makes is that my count of individuals who lost polling places should subtract individuals who moved between 2014 and 2018. These individuals, per Dr. Thornton, might have received new polling places regardless. And, since Black individuals move on average

¹⁰My original report’s Table 3 does not include individuals whose race cannot be determined.

more often than Whites (noted in my original report and cited as well in Dr. Thornton's report) my count of Black registered voters who lost their polling places in 2014 is an overstatement.

133 I do not find this critique compelling. By Dr. Thornton's logic, an accounting of the number of Black registered voters who lose their polling places should effectively punish these individuals for the fact that they are frequent movers. In contrast, I argue that, to identify the number of individuals affected by the aforementioned 459 polling location closures in Georgia, I look to see who was assigned to these locations as of 2014. Whether anyone so assigned moved (or passed away, for example) afterward is not relevant.

4.8 Critique: the effects of polling place changes on non-movers vary by county

134 Dr. Thornton raises a concern about county variability and its impact on my report's results about the rate in Georgia of closed polling places. She writes in her report, “[T]here is substantial variation among the 159 Georgia counties in the rate 20 of closure/movement of precincts” (p. 13, paragraph 30).

135 I do not dispute Dr. Thornton's comment that there is variability across Georgia counties in the extent to which polling places were closed in the period 2014-2018. Indeed, my report noted this explicitly on p. 44,

paragraph 114, where I wrote: “The rate of polling place closure by county varied across Georgia.” As evidence of this, my report includes a barplot (Figure 2 on p. 45) that illustrates the variability described in the report and noted by Dr. Thornton.

136 My report did not hide from variability in polling place closure rates across Georgia, and the existence of this variability does not negate the report’s statewide results. In terms of Dr. Thornton’s critique of my Tables 4-6, which report results based on racially homogeneous or near homogeneous areas in Georgia, Dr. Thornton does not dispute any of the numbers in the tables. What she does say in her report about these tables, however, is that they “do not adjust for the variation that exists by county” (p. 13, paragraph 32).

137 Respectfully, I do not understand what Dr. Thornton means here, and in particular I do not understand her use of the word “adjust.” Tables 4-6 do indeed contain Georgia-wide results, and this is intentional on my part. I am not familiar with an “adjustment” that one would make to a statewide result that would ostensibly correct for county variation or any other form of variation that might exist. Dr. Thornton does not offer a citation to a proposed adjustment, nor does she explain how such an adjustment would work.

138 Overall, I stand behind my statewide calculations, and Dr. Thornton has not shown that any of them are erroneous. She disputes these calculations by noting variability across Georgia in polling place closure rates, a point that I documented in my original report as well.

4.9 Critique: dropping Bibb County changes a key result

139 In the process of discussing variability across Georgia in polling place closure rates, Dr. Thornton offers the following observation: “If Bibb County is removed, the percentage of African- American registered voters in 2014 with a closure as of 2018 is reduced to 15.63% and the percentage of Caucasian registered voters increases to 16.36%, yielding an African-American-Caucasian difference of -0.74 percentage points rather than the +0.12 percentage points that Dr. Herron calculates” (p. 13, paragraph 30).

140 Dr. Thornton’s argument is that Georgia minus Bibb County has different race-based patterns of polling place closures than Georgia with Bibb County. I replicated Dr. Thornton’s calculations, and I do not find them troubling for the following reason.

141 First, while Dr. Thornton refers to Bibb County as “one small county,” this county happened to be the 13th largest county in Georgia, of 159, as measured by number of registered voters in 2014. Bibb County

contained approximately 1.54 percent of Georgia's registered voters in 2014, well over 0.63 percent, which is approximately 1 / 159. I would thus say that Dr. Thornton's characterization of Bibb County as "small" is a stretch of this term.

142 Second, the 12th largest county in Georgia—as before, measured by numbers of registered voters in 2014—is Hall County and the 14th largest county, Columbia County. I now follow the approach used by Dr. Thornton in her report, first dropping Hall County from my analysis and then computing the Black-White gap in polling place closure rates and then dropping Columbia County.

143 The results are as follows. If I drop Hall County (12th largest county in the state), I find a greater Black-White gap in polling place closure rates than that identified in my original report, *i.e.*, that Black voters experienced polling place closures at an even greater rate than White voters. In particular, the Black-White gap in the original report is 0.12 percentage points, and this gap becomes 0.5 percentage points in the absence of Hall County.

144 Now I drop Columbia County (14th largest county in Georgia). The aforementioned gap of 0.12 percentage points becomes a gap of 0.04 percentage points.

145 If, as a thought experiment, I drop DeKalb County, which is the second largest county in Georgia measured by 2014 registered voters, the 0.12 percentage point gap increases by almost a factor of six to approximately 0.7 percentage points.

146 To be clear, I am not suggesting that my analysis of Georgia polling place closures in the period 2014-2018 should drop any of the state's counties. Rather, the examples I have listed above, in conjunction with Dr. Thornton's dropping of Bibb County, illustrate the absurdity inherent in arguing that it is reasonable to critique my report's analysis by arbitrarily dropping part of Georgia.

147 Dr. Thornton's dropping of Bibb County is an example of what one might call cherry-picking data for removal. One potential reaction to this—I propose dropping Hall County instead—is just as specious. The point here is that any cherry-picking rule that Dr. Thornton could suggest is no better, and yet also no worse, than a corresponding cherry-picking rule that I could articulate. This militates in favor of an analysis of polling place closures in Georgia that considers the entirety of the state as opposed to all of the state minus an arbitrarily chosen part. My original report constitutes such an analysis.

148 As an aside, Dr. Thornton engages in a similar data-dropping exercise on p. 15, paragraph 35, of her report. In this latter exercise, Dr. Thornton

recomputes some of my race-based statistics on polling place closures when dropping 31 of 159 counties (approximately 19.5 percent of them) in Georgia, namely those counties that did not have any polling place closures in the period 2014-2018. She argues that, when 31 of 159 counties are disregarded, the conclusions that I describe in my report change.

149 I cannot understand why Dr. Thornton seems to believe that dropping 31 of 159 counties is useful. The purview of my original report is the entire state of Georgia. As Dr. Thornton herself points out and as is evident in my report, some counties in Georgia had no polling place changes 2014-2018 and some did. All of these counties are nonetheless part of Georgia and belong in a statewide analysis.

150 There are, of course, many ways to choose 31 counties from a set of 159 (roughly 9×10^{32} such ways). I would argue that, rather than engage in an argument over which Georgia counties truly belong in a statewide analysis, the appropriate position is to include all counties, which is what I did in my original report.

5 Revisiting the conclusions in my original report

151 My original report in this litigation offers a variety of analyses that collectively show that the polling place closures in Georgia in 2014-2018, approximately the post-*Shelby County* period, have not been racially neutral. In particular, Black registered voters in Georgia have been disproportionately affected by polling place closures in the state compared to White registered voters.

152 My original report also considers the extent to which there is evidence of downstream consequences of polling place closures. It finds that voter turnout in the 2018 General Election in Georgia was higher for registered voters who did not receive new polling places than for registered voters who did.

153 Dr. Brunell and Dr. Thornton, in two separate reports, have critiqued and in some cases outright challenged the results in my original report.

154 Regarding my finding about the lack of racial neutrality in Georgia polling place closures in the time period 2014-2018, neither Dr. Brunell nor Dr. Thornton has offered a critique which undermines this finding. Regarding potential downstream effects on voter turnout of polling place closures,

Dr. Thornton offers what I described in this report as a potentially important critique. I responded to this critique with a new set of calculations, and my findings about downstream effects are now even stronger. In other words, taking seriously Dr. Thornton's concerns about my downstream effects analysis has led me to update the analysis and conclude that the evidence for downstream consequences of polling place changes in Georgia is more compelling than it was based solely on my original report.

References

Haspel, Moshe and H. Gibbs Knotts. 2005. “Location, Location, Location: Precinct Placement and the Costs of Voting.” *The Journal of Politics* 67(2):560–573.

I declare under penalty of perjury that the foregoing is true and correct.
Executed this 8th day of April 2020, at Hanover, NH.



Michael C. Herron, Ph.D.

CERTIFICATE OF SERVICE

I hereby certify that on this, the 9th day of April 2020, I electronically filed the foregoing **SUPPLEMENTAL EXPERT REPORT OF MICHAEL C. HERRON** with the Clerk of Court using the CM/ECF system, which will automatically send notification of such filing to Counsel of Record:

Chris Carr, Esq.
Attorney General
Dennis Dunn, Esq.
Deputy Attorney General
Russell Willard, Esq.
Senior Assistant Attorneys General
Georgia Office of the Attorney General
40 Capitol Square
Atlanta, GA 30334
Telephone: (404) 656-3300
Fax: (404) 657-8733
ccarr@law.ga.gov
ddunn@law.ga.gov
rwillard@law.ga.gov

Bryan Tyson, Esq.
Bryan Jacoutot, Esq.
Diane F. LaRoss, Esq.
Loree Anne Paradise, Esq.
Taylor English Duma LLP
1600 Parkwood Circle
Suite 200
Atlanta, GA 30339
Telephone: (678) 336-7249
Fax: (404) 856-3250
btyson@taylorenglish.com
bjacoutot@taylorenglish.com
dlaross@taylorenglish.com
lparadise@taylorenglish.com

Joshua Barrett Belinfante, Esq.

Brian Edward Lake, Esq.

Carey Allen Miller, Esq.

Vincent Robert Russo, Jr., Esq.

Alexander Denton, Esq.

Robbins Ross Alloy Belinfante Littlefield, LLC -Atl

500 Fourteenth Street, NW

Atlanta, GA 30318

Telephone: (678) 701-9381

Fax: (404) 856-3250

jbelinfante@robbinsfirm.com

blake@robbinsfirm.com

cmiller@robbinsfirm.com

vrusso@robbinsfirm.com

adenton@robbinsfirm.com

/s/ Leslie J. Bryan

Leslie J. Bryan

Georgia Bar No. 091175